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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Ronald Dekker

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PHILIPS ELECTRONICS NORTH AMERICA CORPORATION  
INTELLECTUAL PROPERTY & STANDARDS  
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EXAMINER

DURBIN, MICHAEL H

ART UNIT

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2815

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/561,532	<b>Applicant(s)</b> DEKKER ET AL.	
	<b>Examiner</b> MICHAEL DURBIN	<b>Art Unit</b> 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) 2,8,10 and 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9 and 11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the entire subject matter of the claims must be shown or the feature(s) canceled from the claim(s). This includes: "at least one switching element," "a first electrode in the active layer," "a functional layer being present on the second side of the insulating layer," "a display pixel" (claim 3), "an electrically conductive layer present between the active layer and the functional layer" (claim 4), "a capacitor" (claim 5), "a high-k area" (claim 6), "a low-k area" (claim 6), "an array of switching elements" and "a rollable cartridge" (claim 11).

No new matter should be entered.

2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

5. **As for claim 6**, claim 6, the limitation "the substrate" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim. Further there is no indication found in the drawings, and no suggestions, teachings, or figures indicating the location or orientation of the various dielectric regions of the instant invention.

***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1 and 3 – 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al. (US 2002/0050599 A1) (hereinafter Lee).**



7. **Regarding claim 1**, Lee discloses and shows (figs. 4a-4f) a flexible monolithic electronic device ([0014]) provided with an insulating layer of electrically insulating material (165) having a first side and an opposed second side (as denoted in the figure above), which insulating layer (165) is provided with a first aperture (drain contact hole 167 in fig. 4d) extending from the first to the second side; an active layer (155) of a semiconductor material on the first side of the insulating layer, in and on which active layer at least one switching element is defined (a thin film transistor), which element is provided with a first electrode in the active layer (161); a flexible coating acting as a protective cover for the at least one switching element (173); and a functional layer (liquid crystal, LC, layer not depicted) being present on the second side of the insulating layer and being electrically connected to the first electrode through the first aperture in the insulating layer (via conductor 171). Though the LC layer is not depicted in the

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drawings for this embodiment, the color filter substrate can be seen in fig. 1 and is discussed in paragraphs 5-12. The functional layer of Lee is the LC layer of the full working device.

8. **Regarding claims 3 – 5**, the functional layer is an electro-optical layer (LC layer) which constitutes, in conjunction with a switching element (the TFT formed with gate 126), a display pixel (as seen in fig 1 and discussed [0005 – 0012, 0030]). An electrically conductive layer (171), a pixel electrode, is present between the active layer (155) and the functional layer (the LC material between the array substrate seen in figs. 4a-4f and the color filter substrate shown in fig. 1). Further, the display pixel comprises a capacitor (a parasitic capacitor) having a first capacitor electrode and a second capacitor electrode, wherein the first electrode is present in the electrically conductive layer (first electrode is 171) and which the second capacitor electrode is defined in the active layer (115), the insulating layer acting as a dielectric there between (parasitic capacitor extant between the source electrode 159 and the pixel electrode 171).

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**10. Claims 1 and 3 – 5, 7, and 9 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Murade (US 6,750,924 B2) (hereinafter Murade), and further in view of Lee.**

11. **Regarding claim 1**, Murade discloses and shows (figs. 7A - 7C) a monolithic electronic device provided with an insulating layer of electrically insulating material (41) having a first side (side contacting gate electrode 116G) and an opposed second side (side contacting interlayer dielectric 42), which insulating layer (41) is provided with a first aperture (contact hole 51) extending from the first to the second side; an active layer (30; the active layer is further interpreted to included other elements formed at the same horizontal level, or layer, as the active layer) of a semiconductor material on the first side of the insulating layer, in and on which active layer at least one switching element is defined (TFT 116), which element is provided with a first electrode in the active layer (181); a flexible coating acting as a protective cover for the at least one switching element (40); and a functional layer (alignment layer 118 and overlying liquid crystal (LC) layer) being present on the second side of the insulating layer and being electrically connected to the first electrode (181) through the first aperture in the insulating layer (via pixel electrode 118). Though the LC layer is not depicted in the drawings for this embodiment, the color filter substrate is shown in figs. 1A and 1B. The functional layer of Murade is the alignment film and the LC layer of the full working device.

12. Regarding the limitation wherein the device is a "flexible," this is considered to be inherently met by the device of Murade. Since no degree of flexure is claimed and all

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substrates are capable of at least some degree of flexure, then the device of Murade must meet the limitation.

13. However, if Applicant can show that the device of Murade does not support any flexure, then it would have at least been obvious, in view of Lee, to form a flexible device in order to make a working flexible display with a reduced risk of cracking the substrate during fabrication ([0003, 0012 - 0014, and 0033]).

14. **Regarding claims 3 – 5**, the functional layer is an electro-optical layer (alignment layer and LC layer) which constitutes, in conjunction with a switching element (the TFT 116), a display pixel (having pixel electrode 118 as seen in fig. 3). An electrically conductive layer (118), a pixel electrode, is present between the active layer (30) and the functional layer (the alignment film and LC material are between the array substrate and the color filter substrate of a working device). Further, the display pixel comprises a capacitor (119 of fig. 3) having a first capacitor electrode (118) and a second capacitor electrode (181), wherein the first electrode (118) is present in the electrically conductive layer and which the second capacitor electrode (181) is defined in the active layer (considered to be in the horizontal layer that comprised the active region), the insulating layer (41) acting as a dielectric there between.

15. **Regarding claim 7**, the switching element (TFT 116) is part of an array as seen in fig. 3. The array is driven by a driving circuit (col. 1, lines 36 – 46; col. 2, lines 1 – 19; and col. 5, lines 26 – 35) comprising an integrated circuit (peripheral circuit and device are an integrated circuit, including leads connecting the driving circuit to the devices;



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col. 5, lines 26 – 35), and elements such as the driving TFT are formed in and on the active layer.

16. **Regarding claim 9**, the flexible device is an apparatus.

17. **Claim 6 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Murade (US 6,750,924 B2) (hereinafter Murade), and further in view of Lee, and further in view of Hirakata et al. (US 6,771,342) (hereinafter Hirakata).**

18. **Regarding claim 6**, Murade teaches that insulating layers 41 and 42 may be formed of silicate glass films (low-k films such as BSG, BSPG) or of silicon nitride (high-k material). Murade does not, however, explicitly state the use of a low-k insulator for the interlayer dielectric (42) and the use of a high-k insulator for the capacitor dielectric (41).

19. First, the use of a silicate glass layer (low-k) as an interlevel dielectric is very well known to one of ordinary skill in the art at the time of the invention, since this reduces parasitic coupling between layers intended to be isolated from each other. Further, BSG and BSPG are well known materials used often for this purpose.

20. Second, Hirakata teaches the use of a silicon nitride layer for use as the dielectric layer of a storage capacitor for an LCD display pixel (col. 12, line 17 – col. 13, line 8). This film is used both as a passivation film and as the dielectric of the storage capacitor (Murade uses film 41 for the same purposes).

21. It would have been obvious to one of ordinary skill in the art at the time of invention to use a silicon nitride film as the film comprising the passivating layer and capacitor dielectric, since Hirakata teaches that silicon nitride serves well as a passivation film and that the material has a great enough dielectric constant to ensure proper coupling even with device scaling (col. 12, lines 28 – 58; col. 21, lines 21 – 25]).

**22. Claims 11 is rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Murade (and Lee), and further in view of E Ink Corp. (WO 02/073572) (hereinafter E Ink).**

23. **As for claim 11**, Murade (and Lee) discloses the claimed invention except he does not explicitly state the limitation such as a rollable cartridge comprising flexible electron device of Inoue.

24. E Ink teaches the use of a housing, analogous to a rollable cartridge, comprising flexible devices (fig. 1; pg. 4 final paragraph - pg. 5 second paragraph).

25. Sankin is evidence that ordinary workers in the art would find a reason, suggestion, or motivation to use a rollable cartridge comprising flexible devices.

26. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Inoue by using a rollable cartridge comprising flexible devices, since this design would have the advantages of being light weight, less cumbersome than a large tablet, and such a housing would help to prevent environmental hazards from damaging the display devices concealed within the tube (E Ink, Page 4).

### ***Response to Arguments***

27. Applicant's arguments with respect to claims 1, 3-7, 9, and 11 have been considered but are moot in view of the new ground(s) of rejection.

28. Applicant's arguments, see Pages 5 and 6, filed 06/08/2007, with respect to the rejections under 35 UCS 112 have been fully considered and are persuasive. The rejection of claims 1 and 5 have been withdrawn. However, though Applicant asserted that claim 6 was amended, no amendments have been received, and the rejection of claim 6 under 35 UCS 112 remains.

### ***Conclusion***

29. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MICHAEL DURBIN whose telephone number is (571)272-9766. The examiner can normally be reached on M-T 7:30-5; 1st Fri. of biweek off, 2nd 7:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on (571) 272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Matthew C. Landau/  
Primary Examiner, Art Unit 2815

MHD